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SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, D.C. 20037-3213
Telephone: (202) 293-7060
Facsimile: (202) 293-7860
RJS/slb
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Robert J. Seas, Jr.
Registration No. 21,092

APPENDIXVERSION WITH MARKINGS TO SHOW CHANGES MADEIN THE CLAIMS:

The claims are amended as follows:

3. A junction structure according to claim 1 ~~or~~ 2, wherein the dielectric layer below the further waveguide region is silicon dioxide.
4. A junction structure according to claim 2 ~~or claim~~ 3, wherein the substrate comprises a layer of silicon dioxide and a layer of silicon.
5. A junction structure according to any of claims 2 ~~to~~ 4, wherein the dielectric layer also extends over the light transmitting semiconductor layer.
7. A junction structure according to any of claims 2 ~~to~~ 6, wherein there is provided an anti-reflective layer over said end face.
9. A junction structure according to claim 7 ~~or claim~~ 8, wherein the light transmitting semiconductor layer is directly covered by a layer of silicon dioxide on the side remote from the substrate.
10. A junction structure according to ~~any of~~ claims 2 ~~to~~ 9, wherein the layer forming the further waveguide region is patterned.
11. A junction structure according to ~~any of~~ claims 2 ~~to~~ 10, wherein the waveguide regions are in the form of rib waveguides.
12. A junction structure according to ~~any of~~ claims 2 ~~to~~ 11, wherein the silicon nitride layer is of sub-micron thickness and is less than one tenth the thickness of the silicon layer.

13. A junction structure according to ~~any one of the preceding claims~~ 1 in which the said end face of the semiconductor waveguide at the junction is curved and forms a lens to direct transmitted light into the adjacent waveguide section.

14. An optical interferometer having parallel light transmitting paths, at least one of said paths including a waveguide junction structure as claimed in ~~any one of claims 1 to 13~~.

17. An interferometer according to claim 15 ~~or claim 16~~, wherein the or each silicon waveguide is a rib waveguide formed from a silicon-on-insulator wafer.

18. An interferometer according to ~~any of claims 15 to 17~~, wherein the insulating layer is silicon dioxide.

22. A method according to claim 20 ~~or 21~~, wherein the second dielectric layer and the silicon nitride layer are deposited such that they also extend over the top surface of the semiconductor waveguide.

23. A method according to ~~any of claims 19 to 22~~, wherein an anti-reflective coating is deposited over the end face of the semiconductor waveguide before the second dielectric layer is deposited.

25. A method according to claim 23 ~~or 24~~ in which the end face is curved.

26. A method according to ~~any of claims 20 to 25~~, wherein the first dielectric layer is patterned.

27. A method according to ~~any of claims 20 to 26~~, wherein the semiconductor and first dielectric form a common integrated waveguide device.